09915388 .072601

Solid Molecular Model

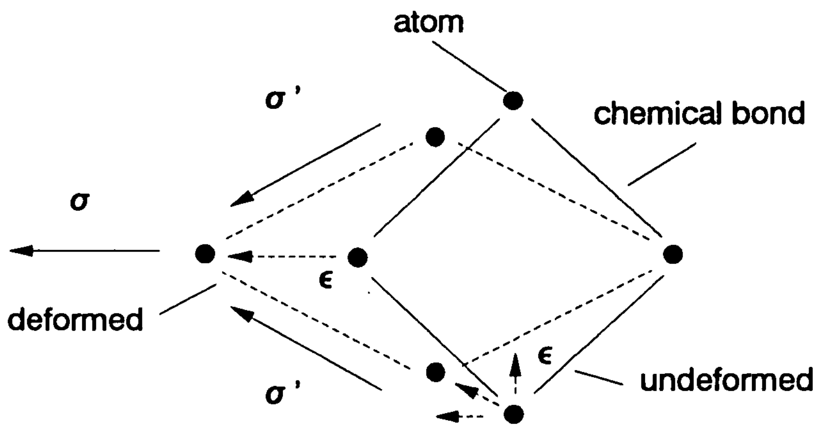


Fig. 1.1 - Prior Art

Ultimate Strain Energy

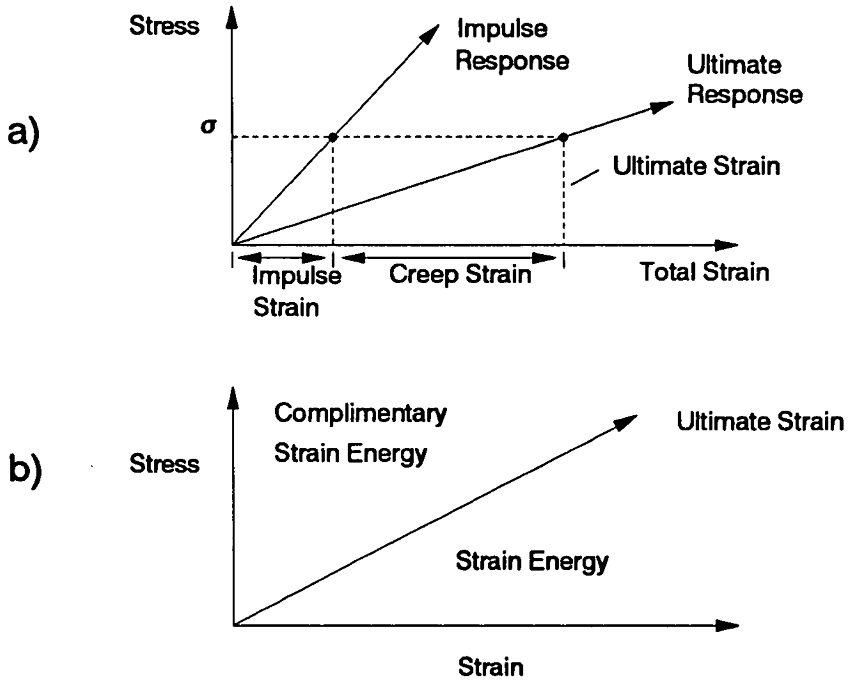


Fig. 1.2 - Prior Art

09915398.072501

Ultimate Elastic and Inelastic Strain

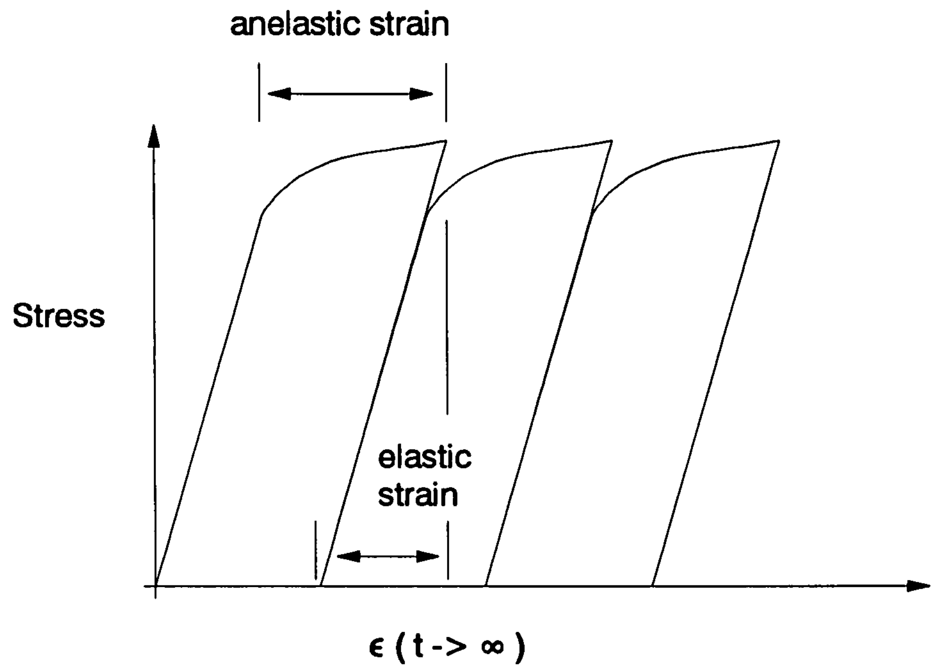


Fig. 1.3 - Prior Art

Single Axis Inversion

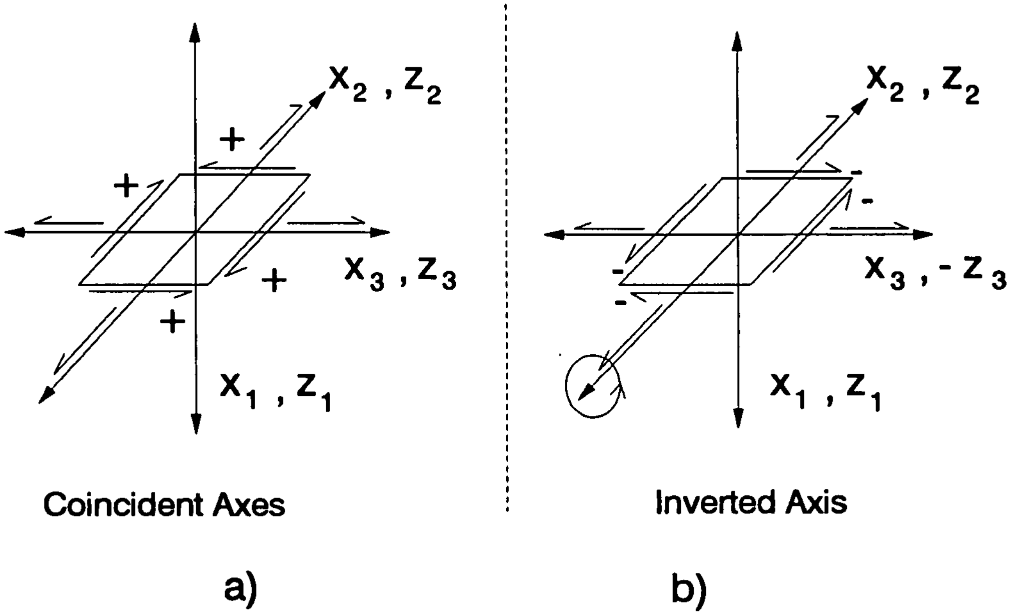


Fig. 1.4 - Prior Art

09915388.022501

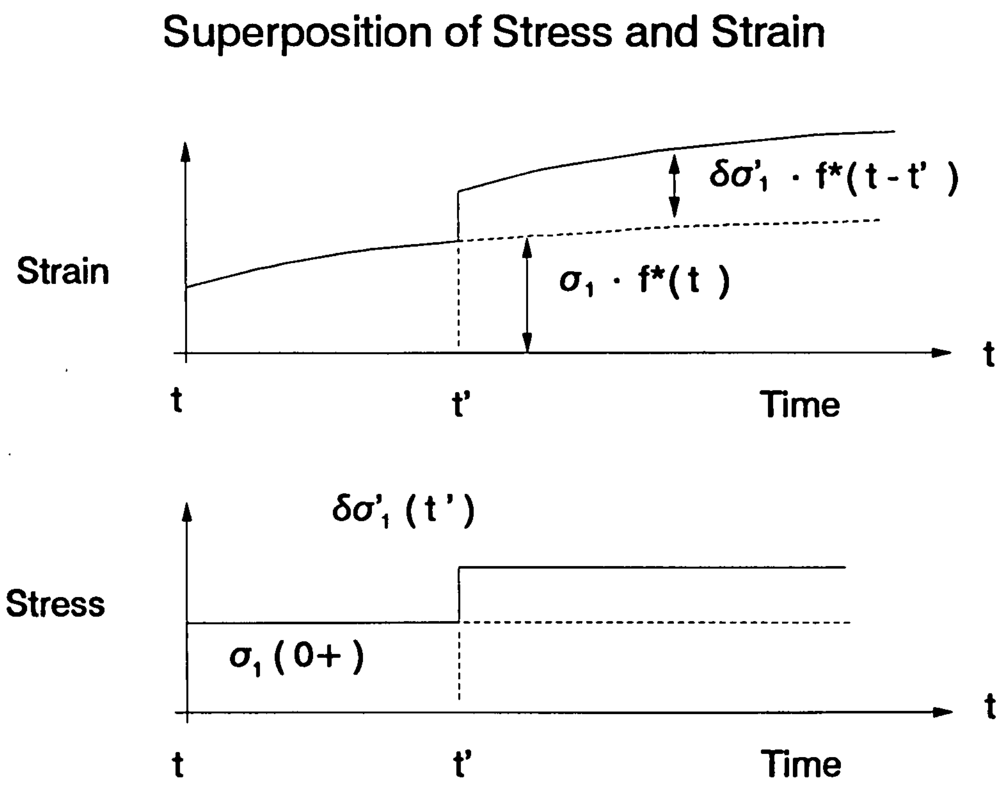


Fig. 1.5 - Prior Art

Stress Increments

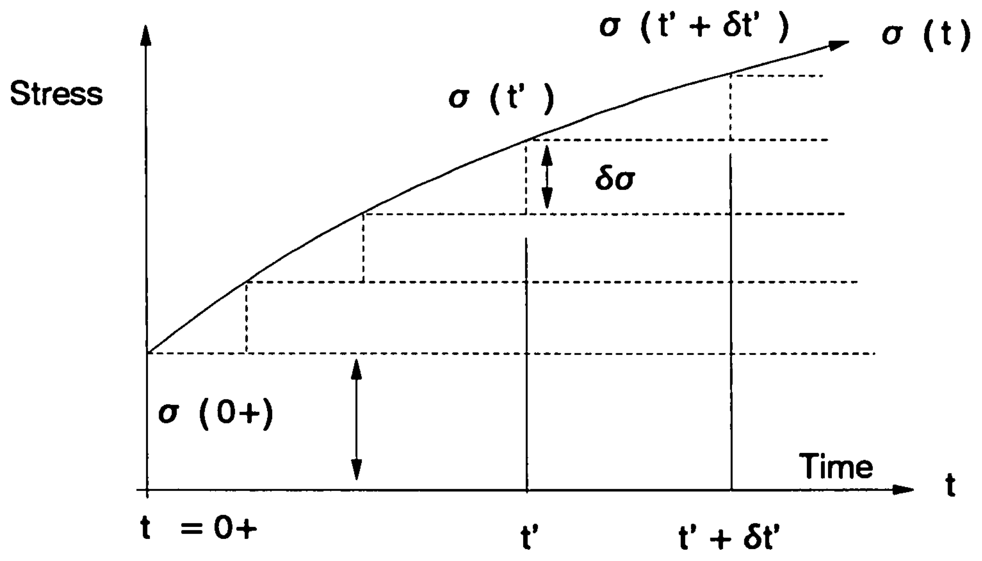


Fig. 1.6 - Prior Art

Elastic Stress vs Strain

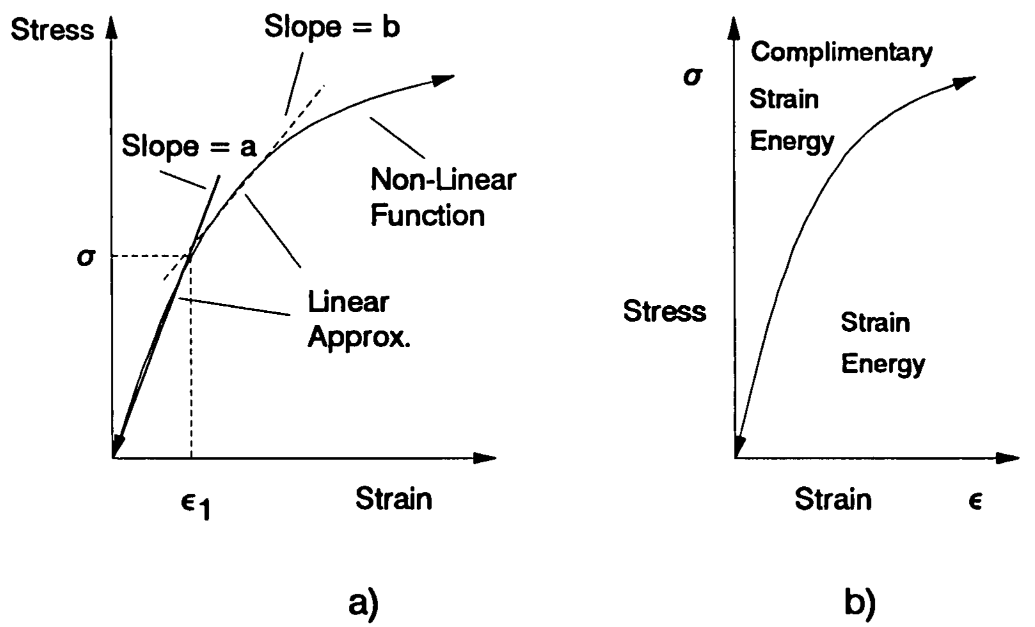


Fig. 2.1 - Prior Art

09915388.022501

Stress Vectors and Resultants

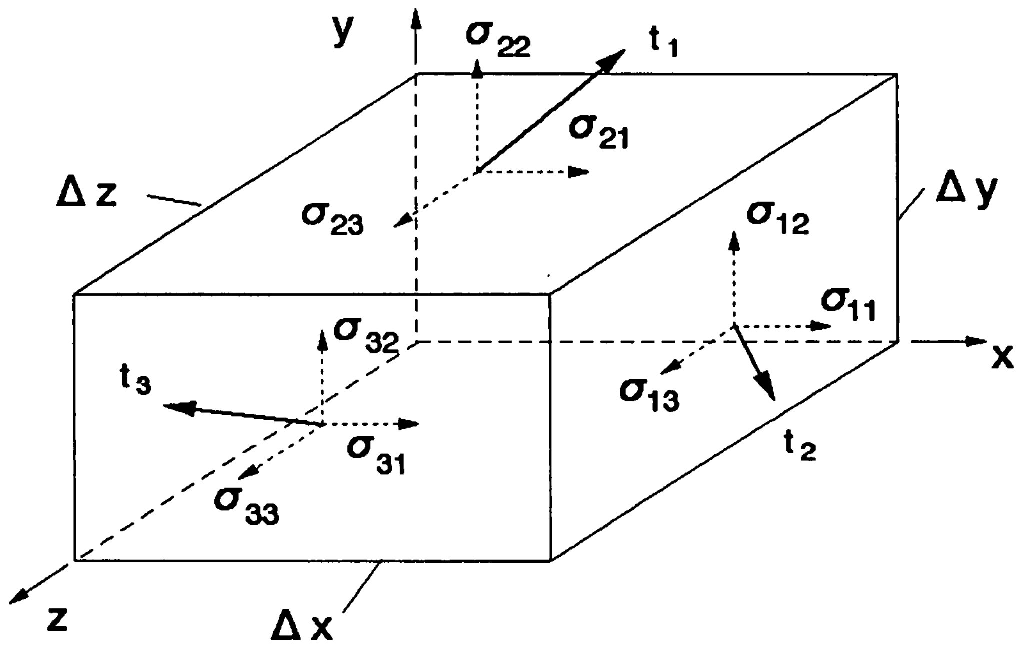


Fig. 2.2 - Prior Art

Stress State at a Point

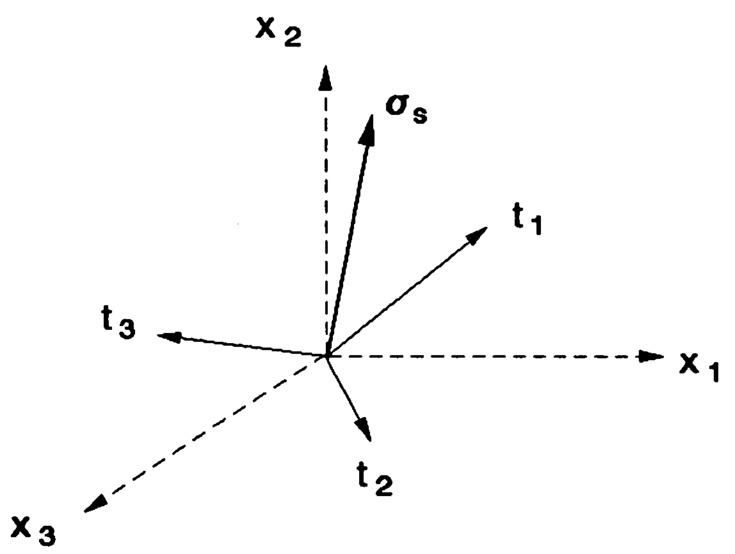


Fig. 2.3 - Prior Art

Stress State and Reference Frames

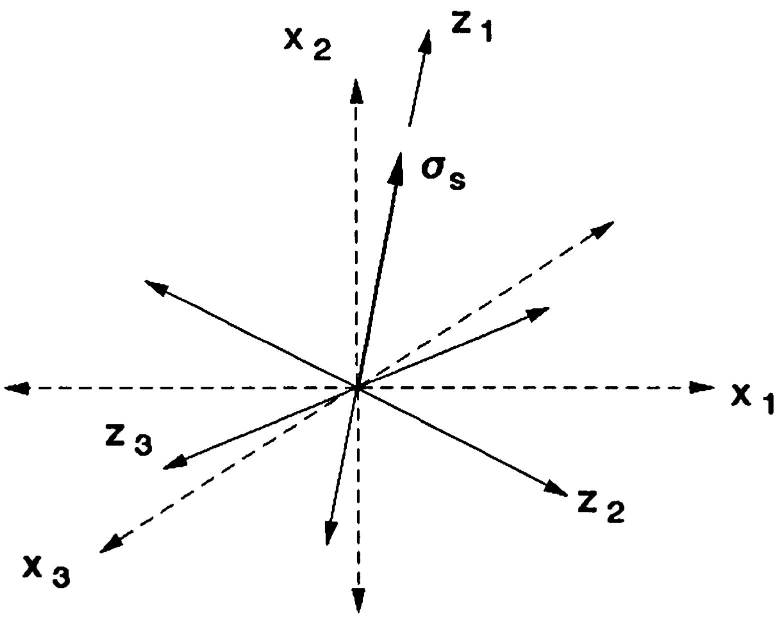


Fig. 2.4 - Prior Art

Stress Vectors & Reference Frames

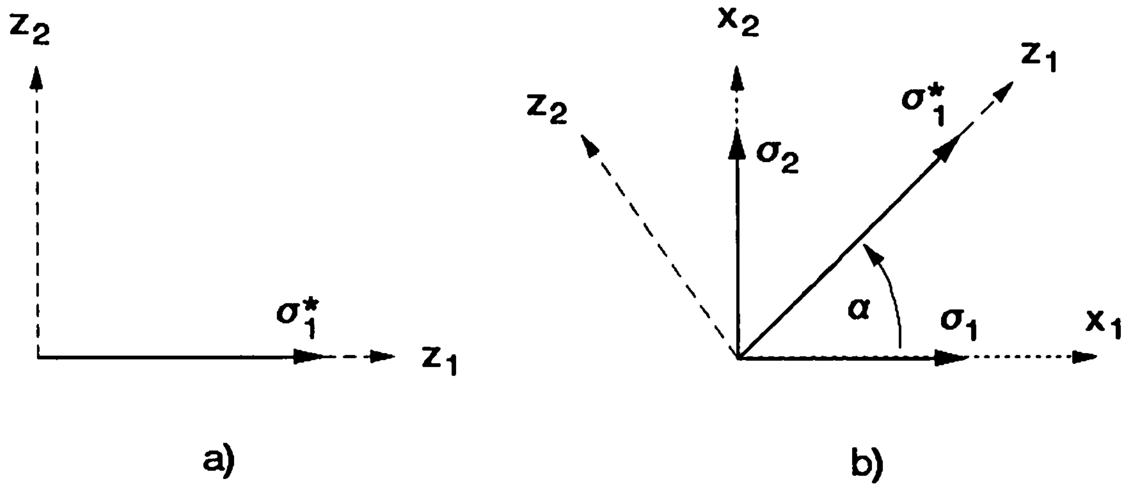
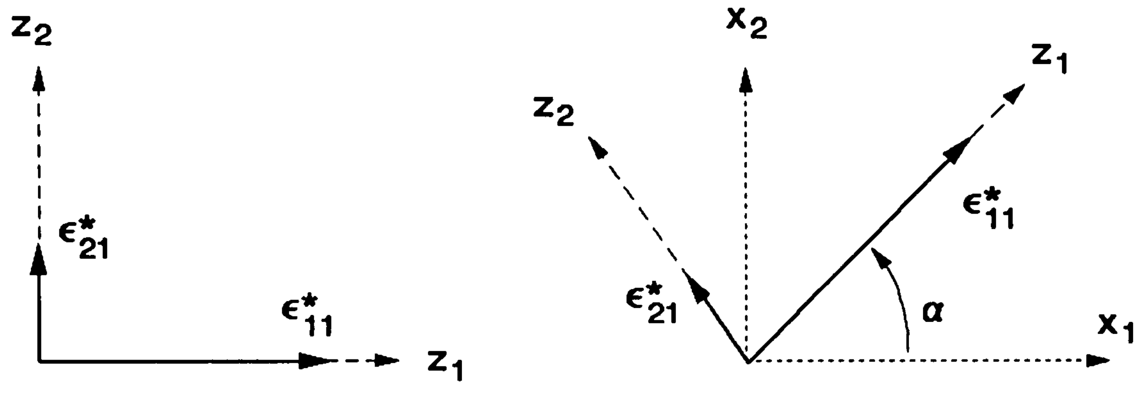


Fig. 2.5 - Prior Art

Strain Vectors



a)

b)

Fig. 2.6 - Prior Art

09915388 .022501

Stress and Reference Frame of State

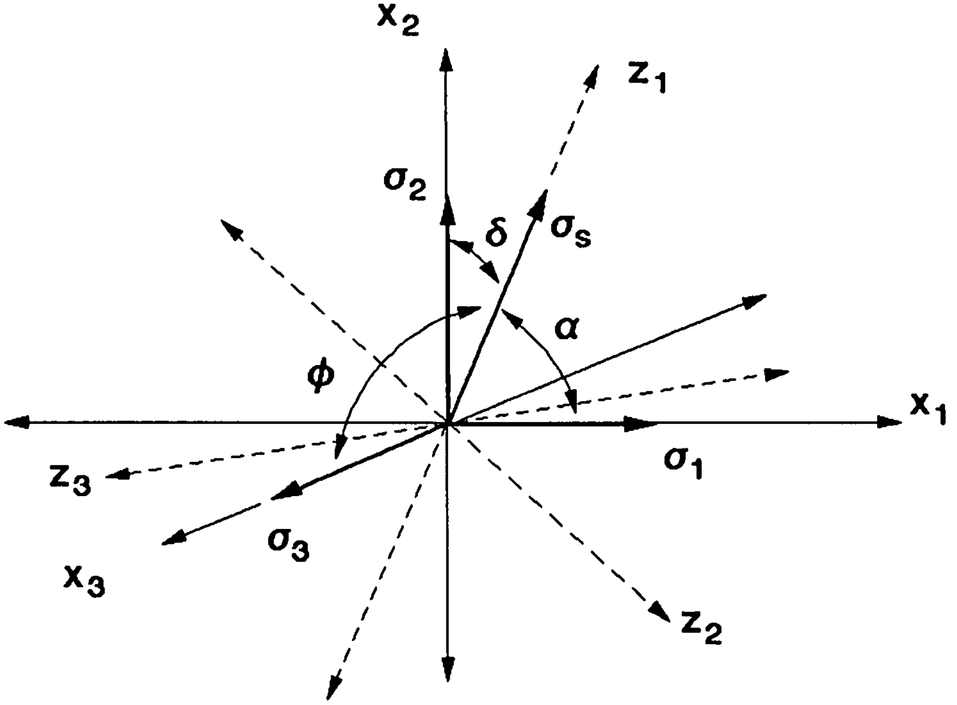


Fig. 2.7 - Prior Art

Stress and Strain Components

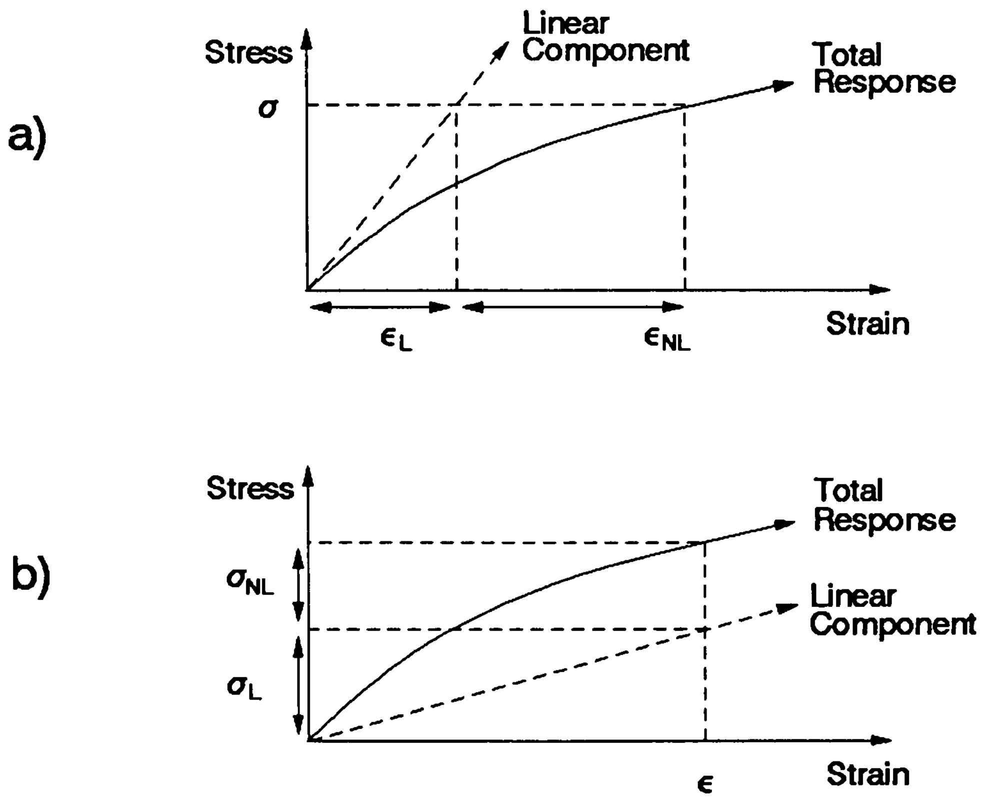
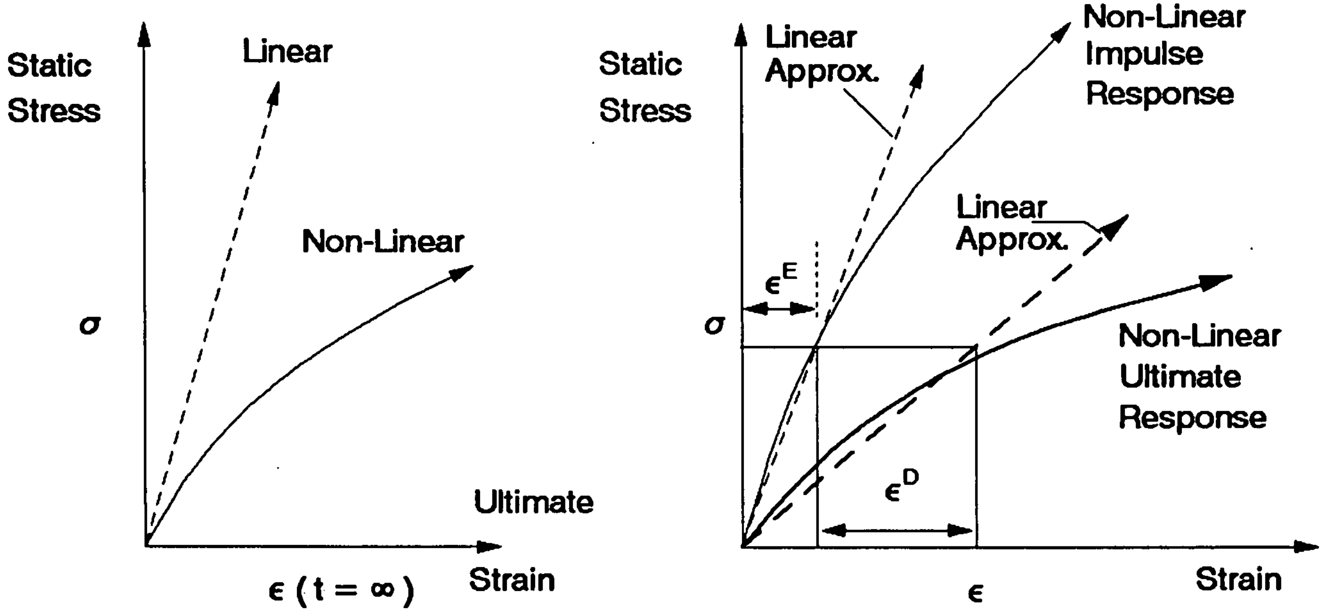


Fig. 2.8 - Prior Art

09815388 . 072601

Impulse and Ultimate Strains



a) b)

Fig. 3.1 - Prior Art

Impulse and Ultimate Strains

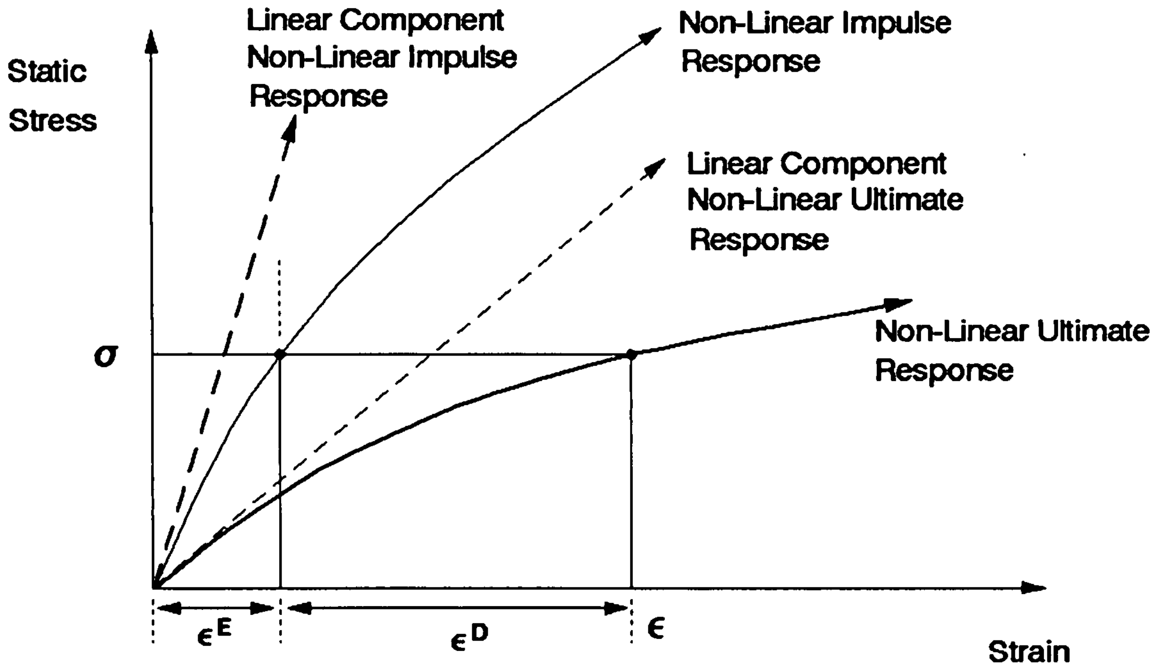


Fig. 3.2

Stress & Strain vs. Time

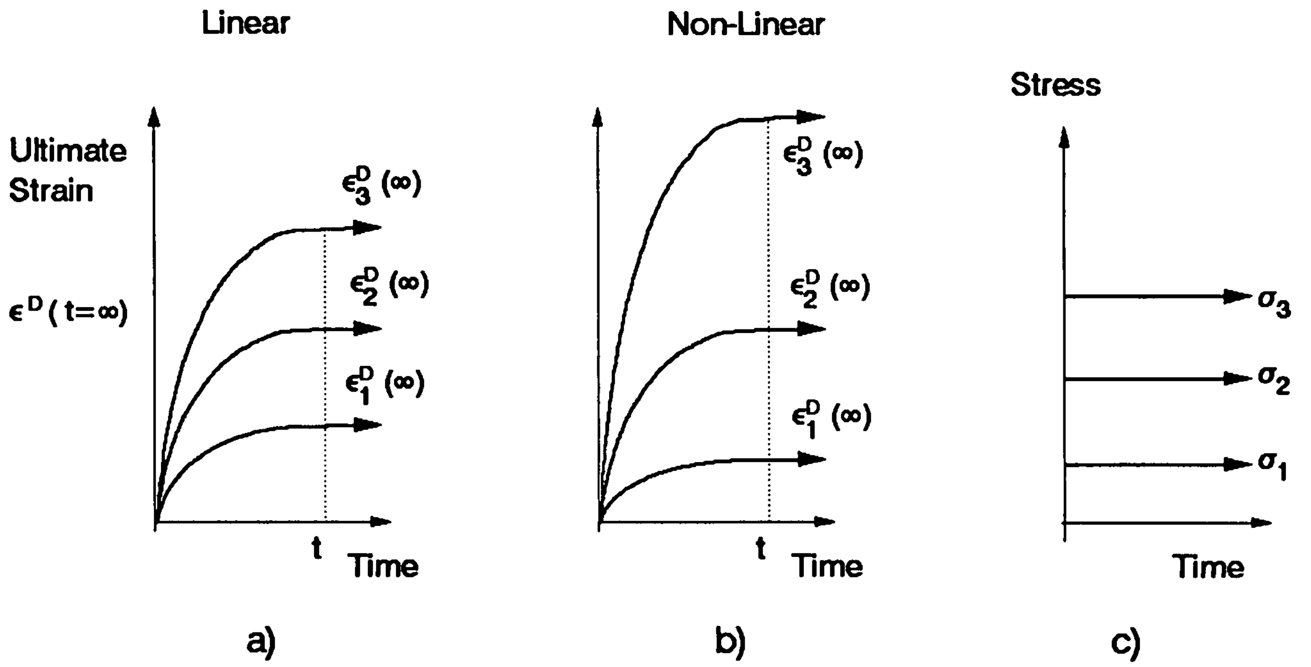


Fig. 3.3 - Prior Art

Cubic Crystals
Lead Sulfide and Sodium Chloride

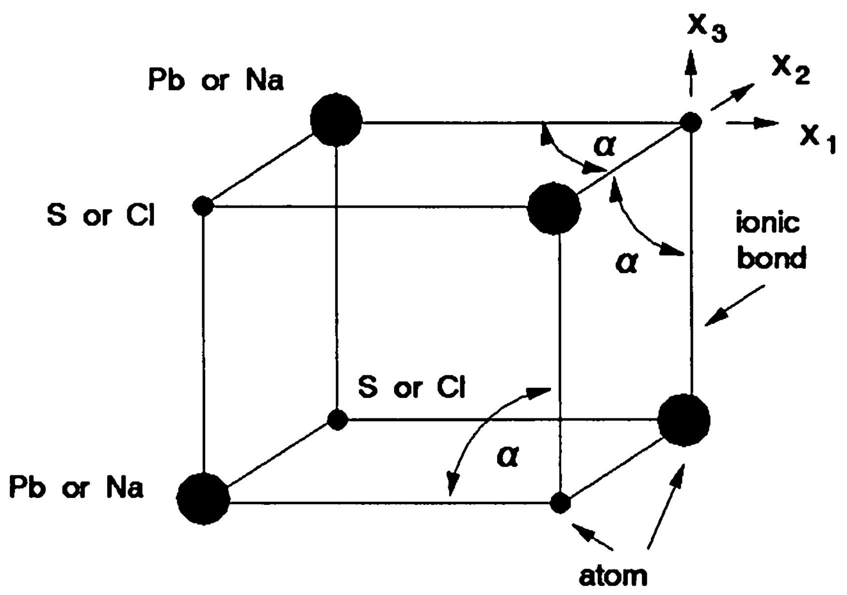


Fig. 4.1 - Prior Art

Orthogonal Lattice Structures

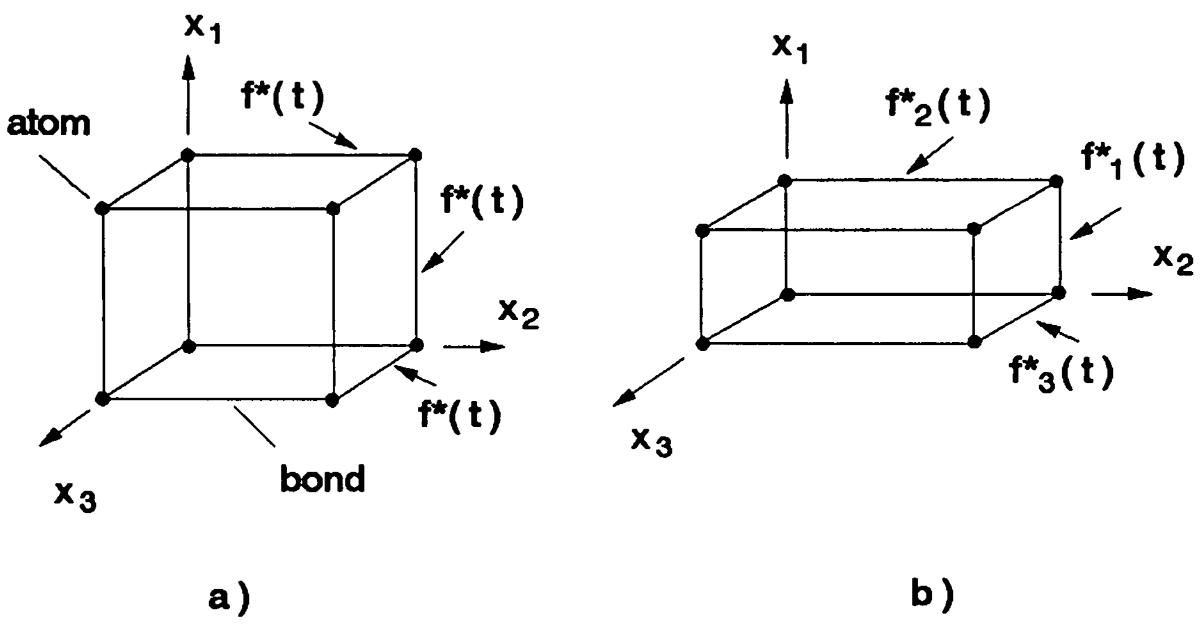


Fig. 4.2

09915288 . 072301

'S' and 'P' Electron Orbits

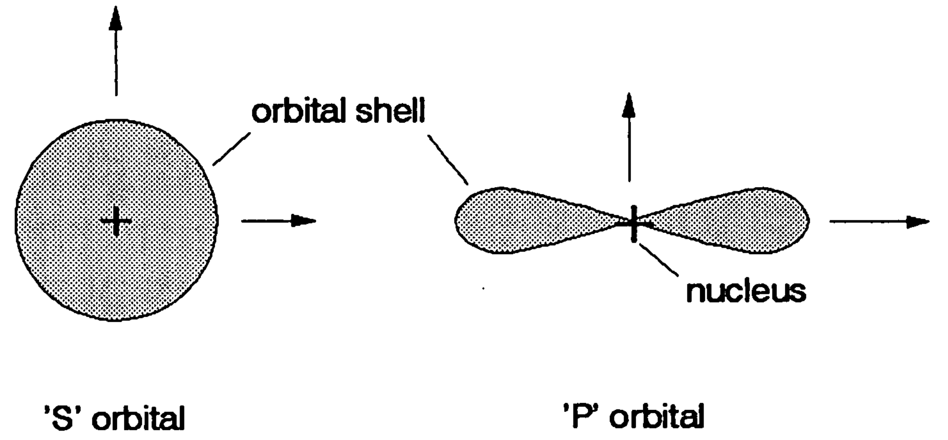


Fig. 4.3 - Prior Art

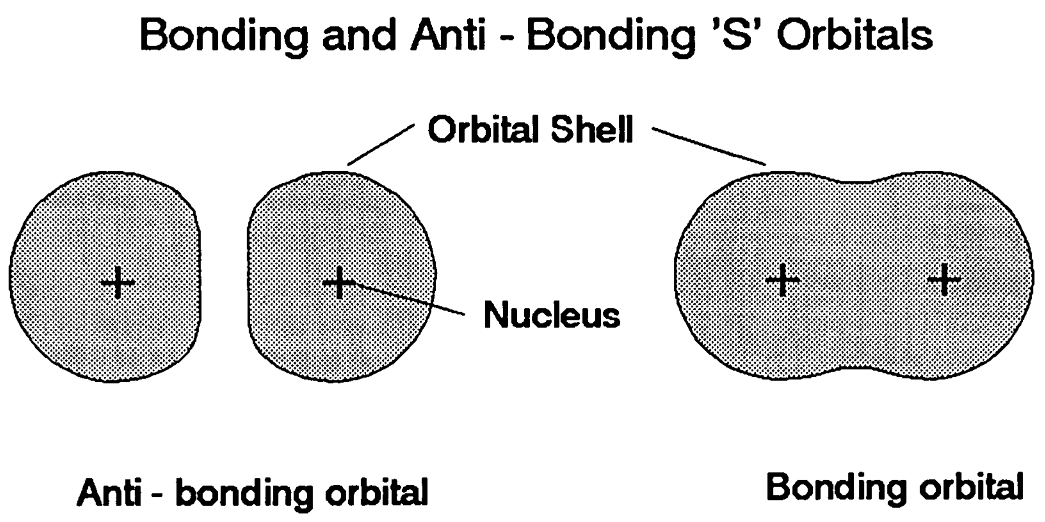


Fig. 4.4. - Prior Art

Bonding and Anti - bonding 'P' Orbitals

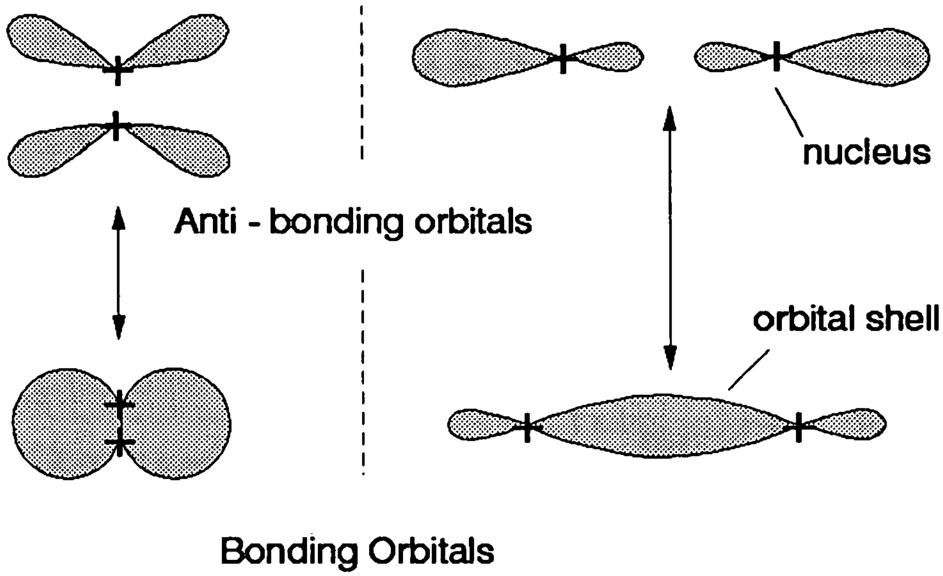


Fig. 4.5 - Prior Art

09915388.023501

Lattice Stresses and Deformations

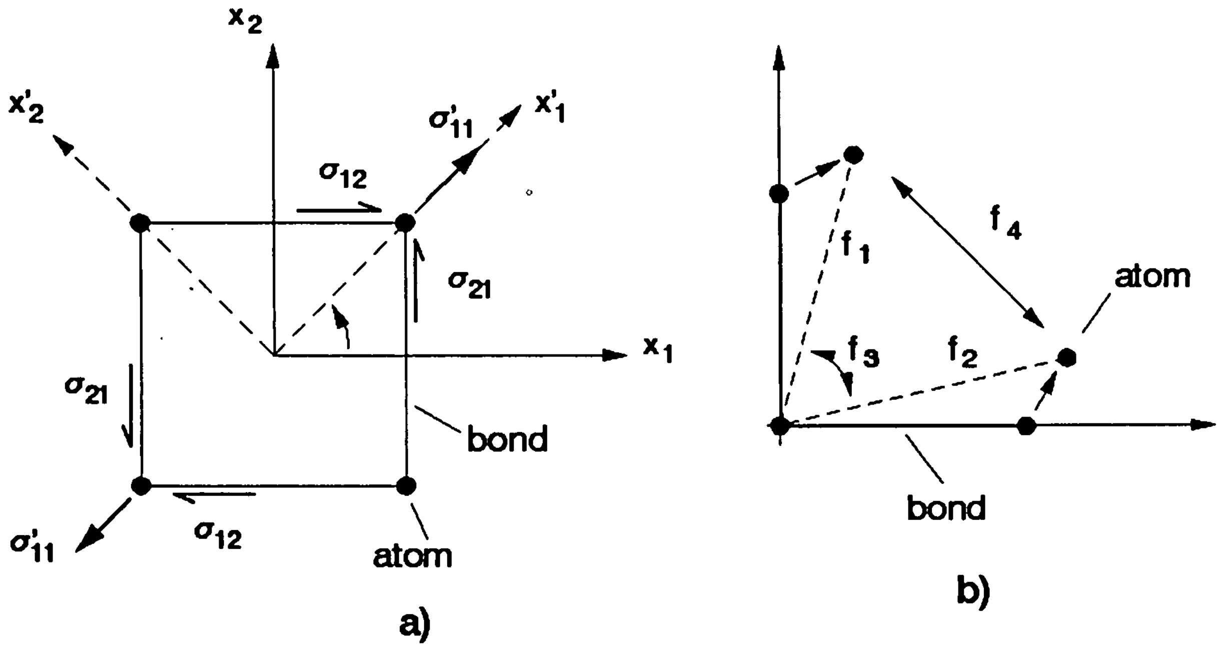


Fig. 4.6

09915399.023501

Lattice Deformation

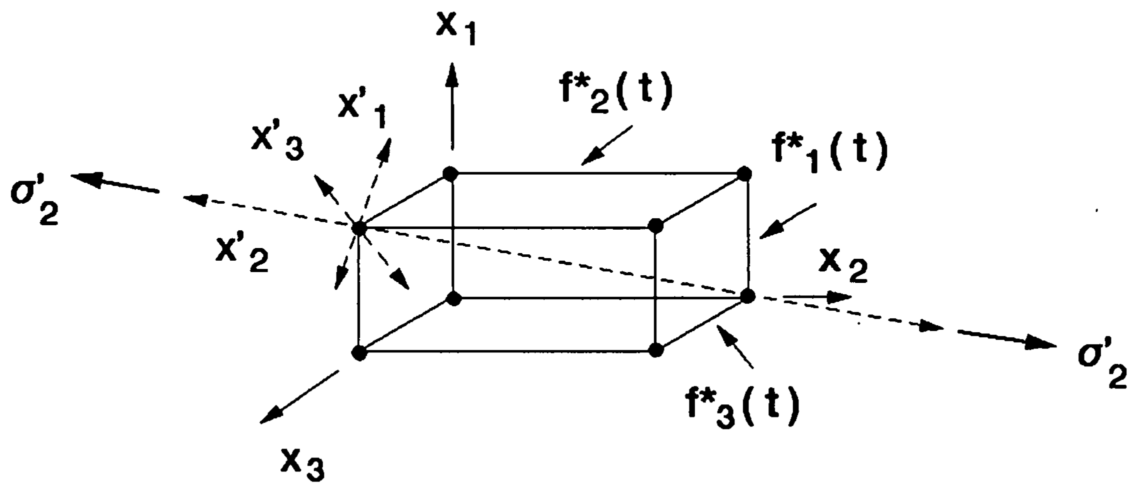


Fig. 4.7

Partial Orthogonality

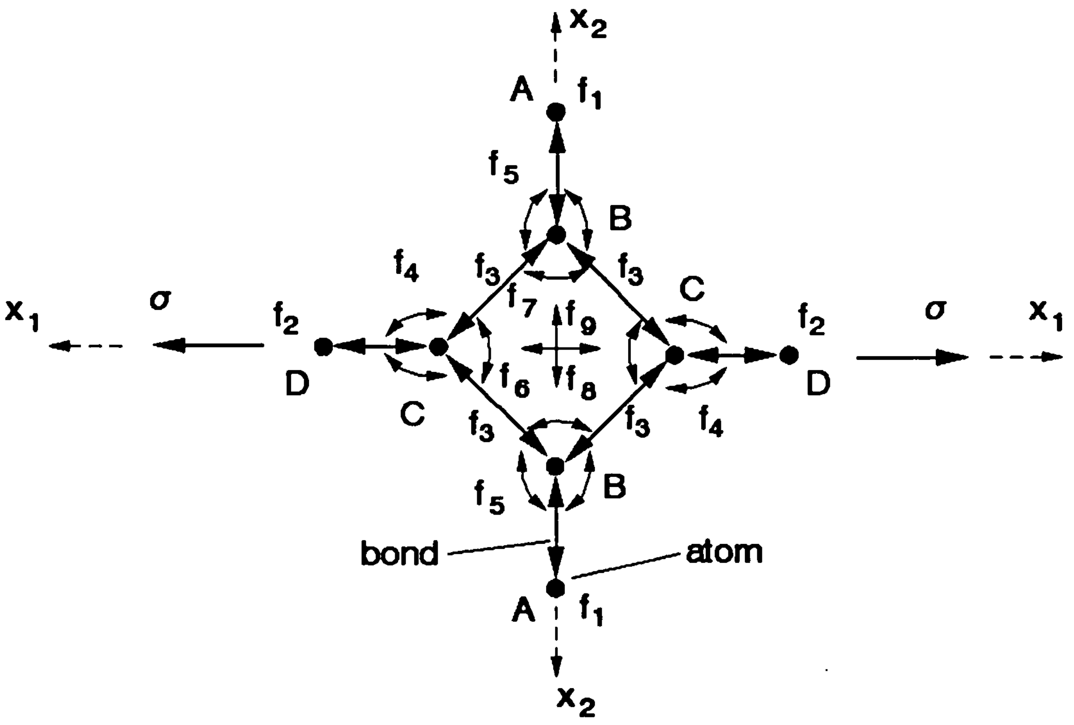


Fig. 4.8

Face Centered Cubic Bonding

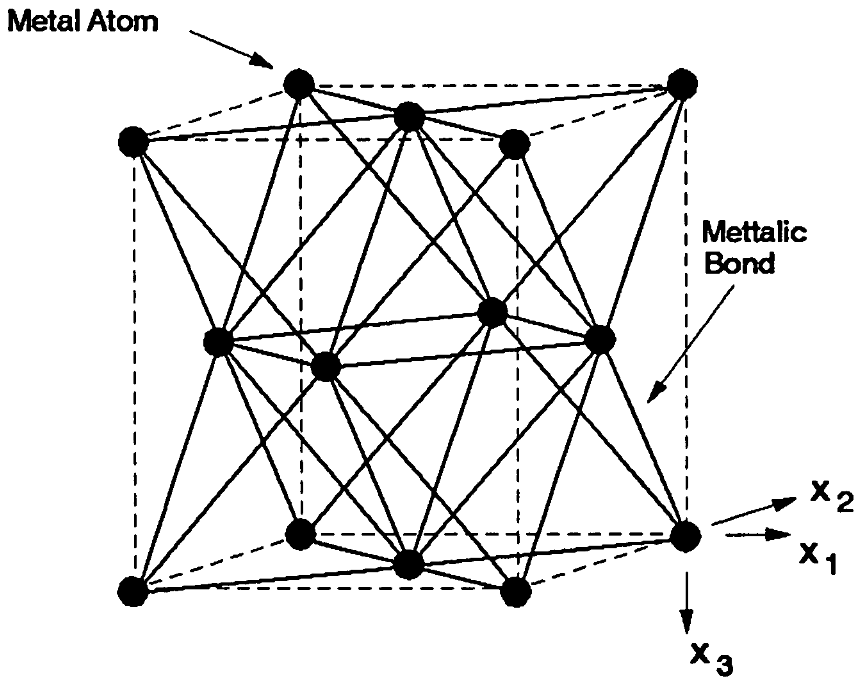


Fig. 4.9 - Prior Art

Sheet Structures

Graphite

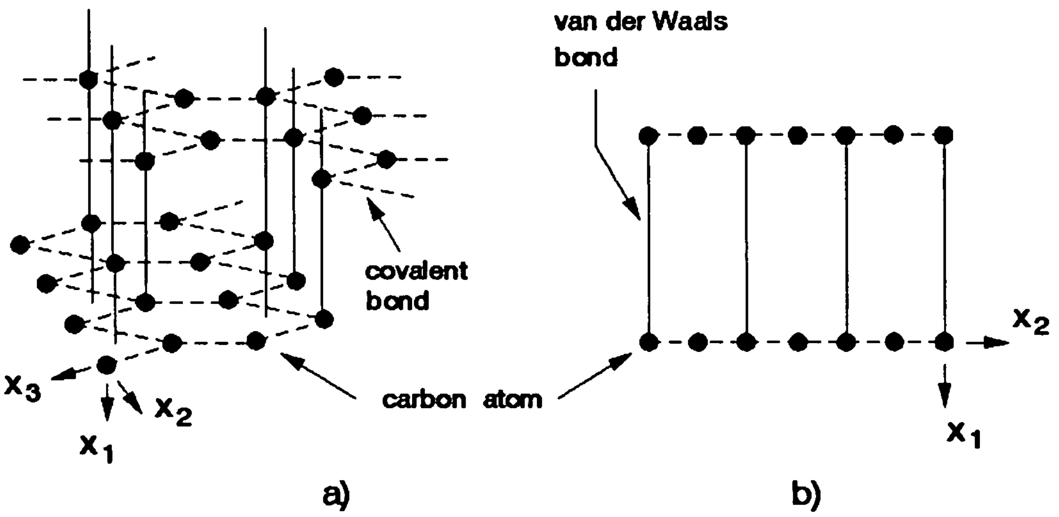


Fig. 4.10 - Prior Art

The Benzene Ring

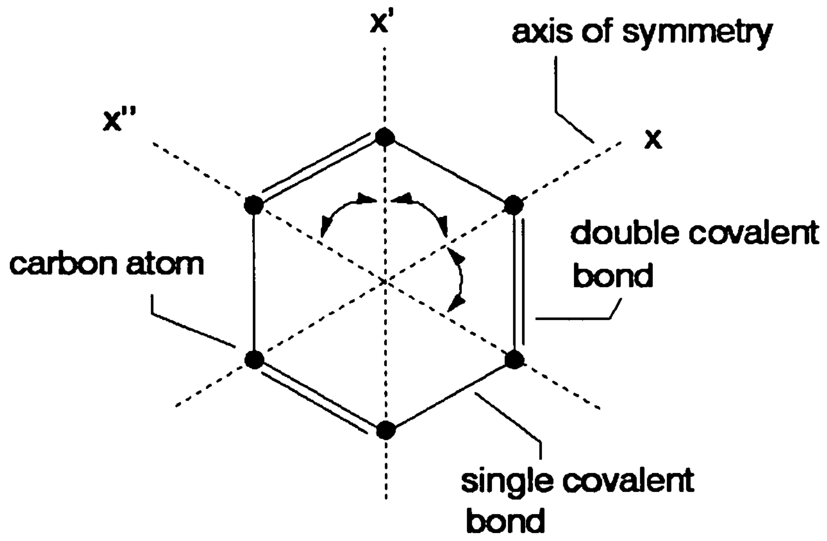


Fig. 4.11 - Prior Art

Crystalline Metallic Iron

Body Centered Cubic Lattice Structure

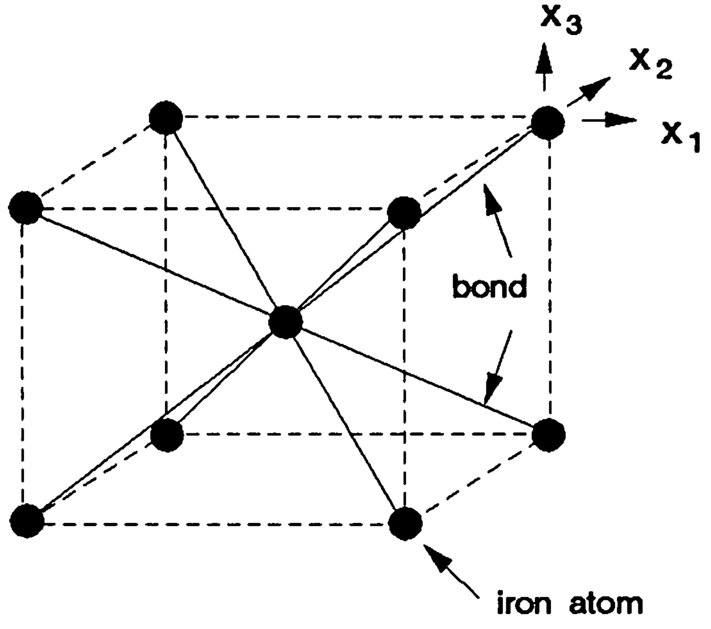


Fig. 4.12 - Prior Art

The 90 Degree Weave

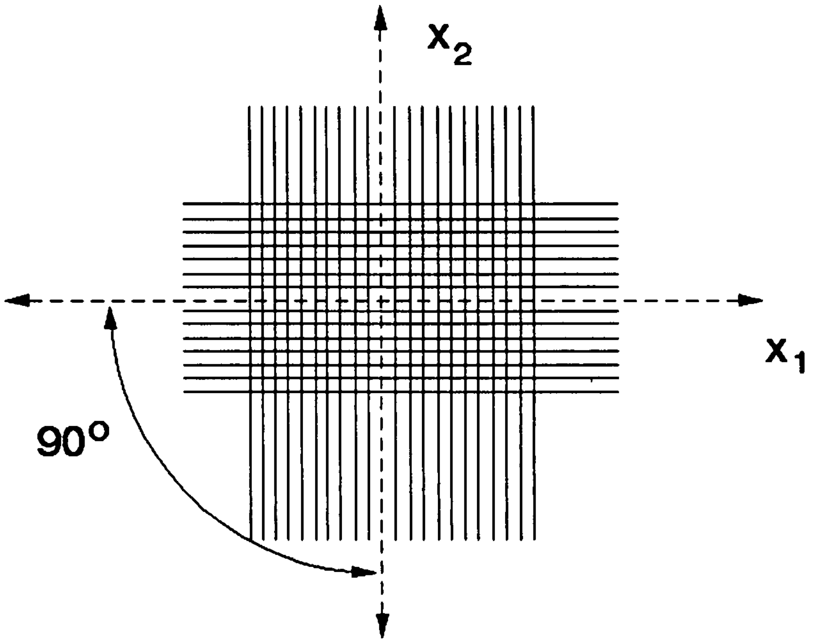


Fig. 4.13 - Prior Art

'Simple ' Fluid Constitutive Responses

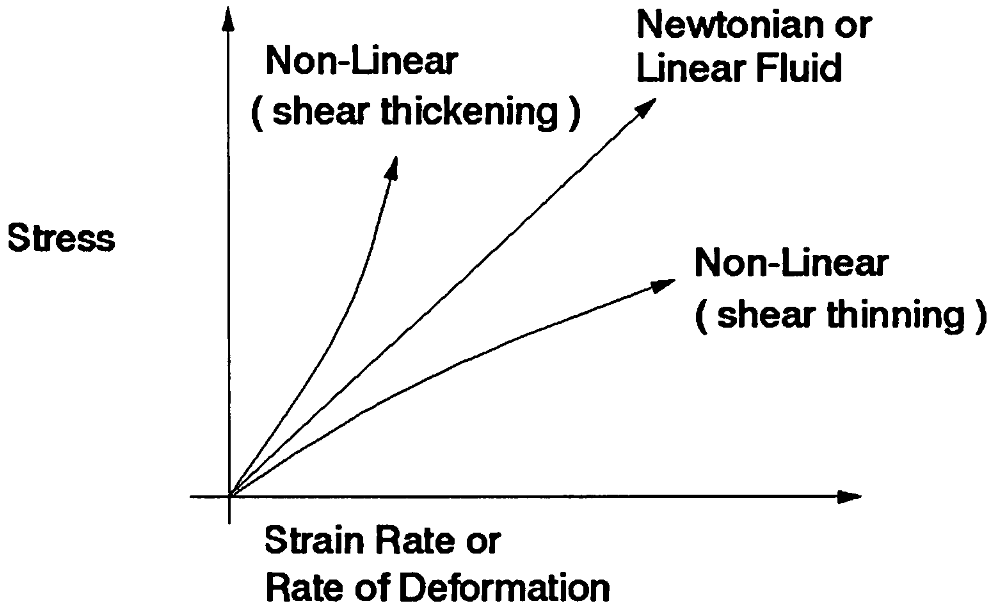


Fig. 5.1 - Prior Art

Viscous and Pressure Forces

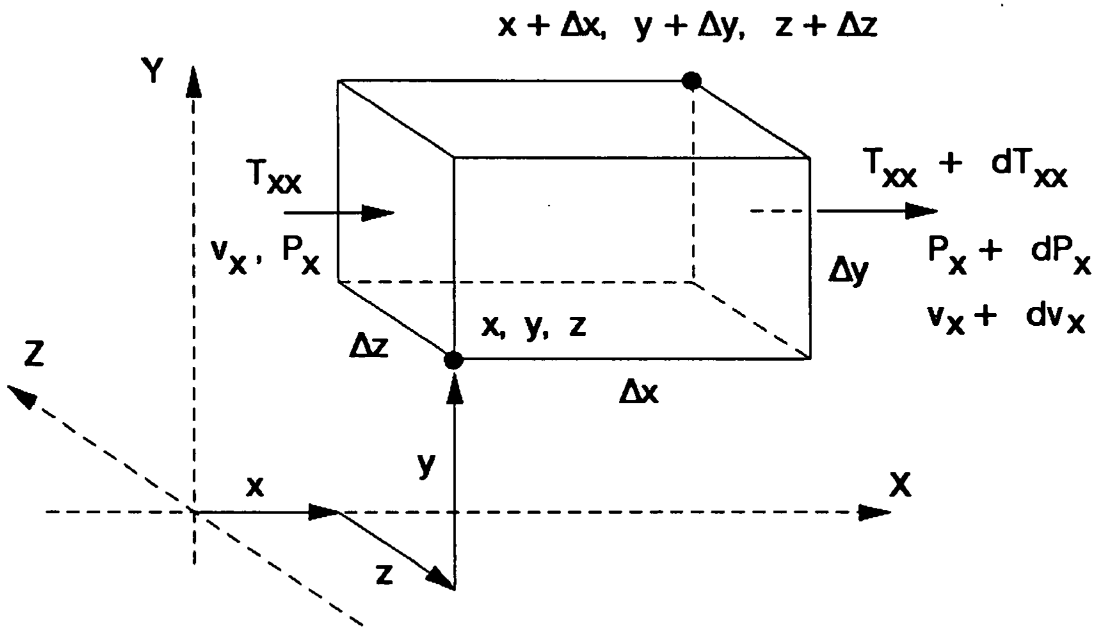
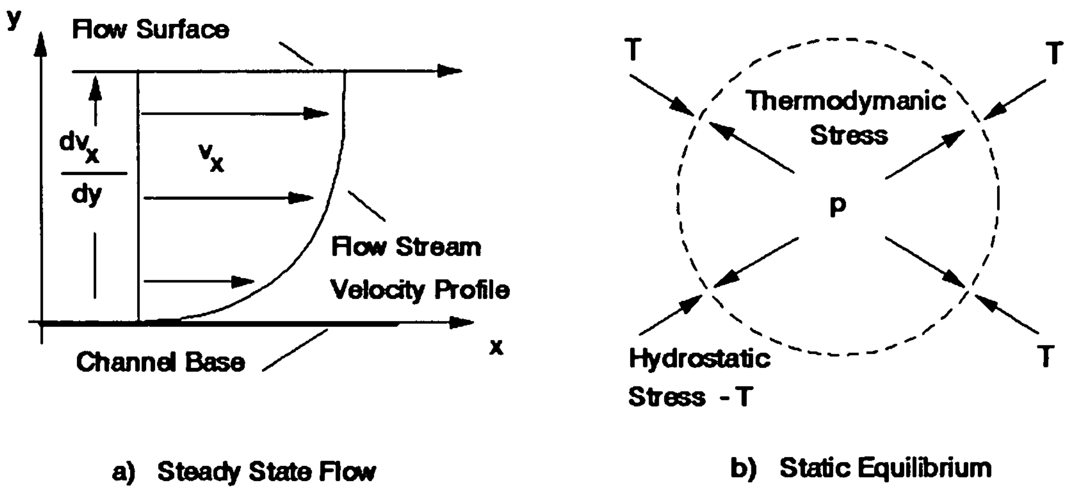


Fig. 5.2 - Prior Art

Static Equilibrium and Steady State Flow



a) Steady State Flow

b) Static Equilibrium

Fig. 5.3 - Prior Art

Creep Response

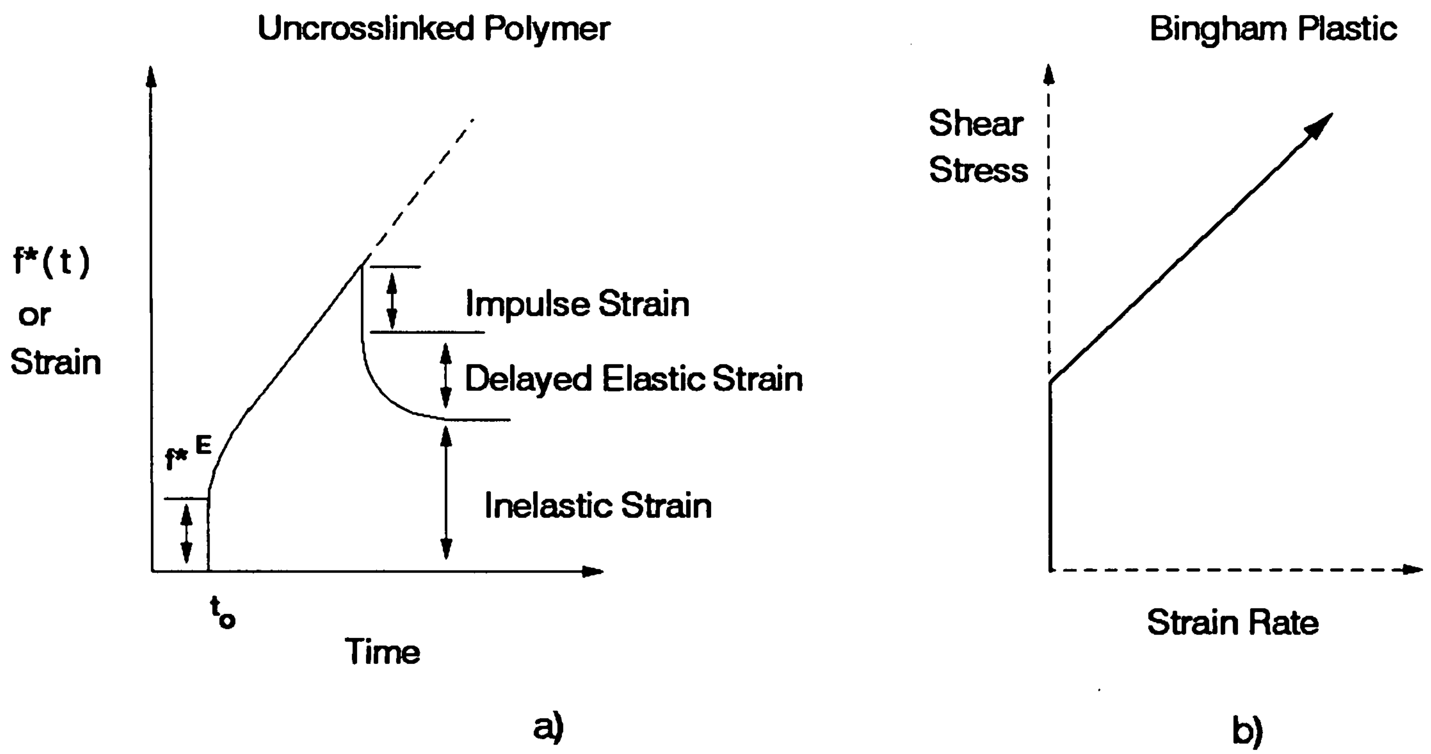


Fig. 5.4 - Prior Art

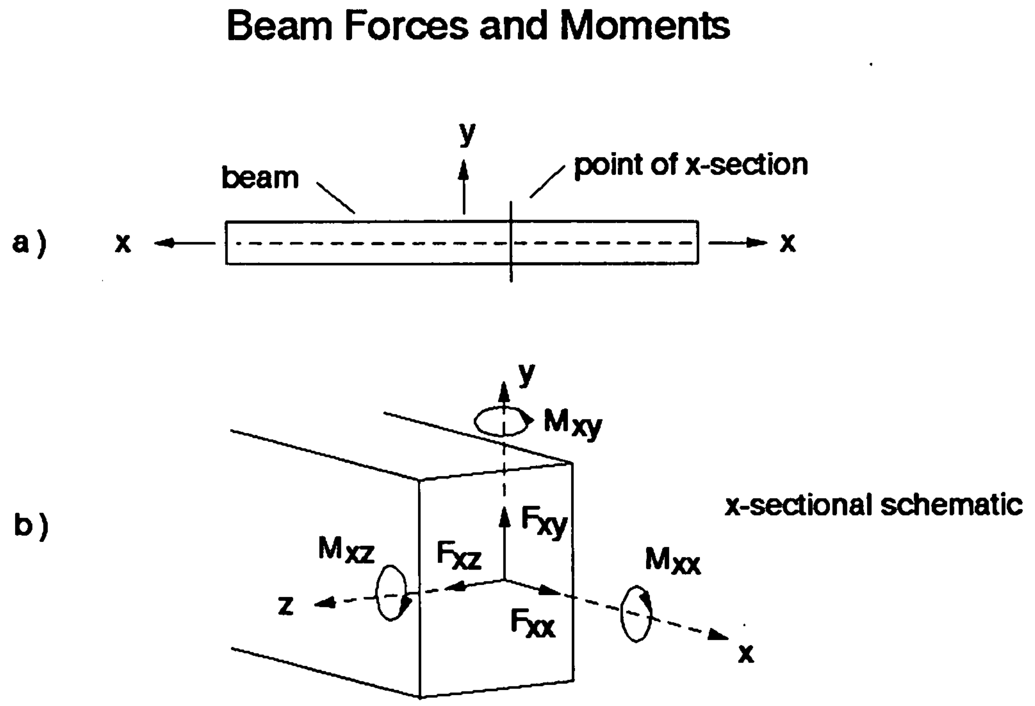


Fig. 6.1 - Prior Art

Diagram of Isolated Beam Element

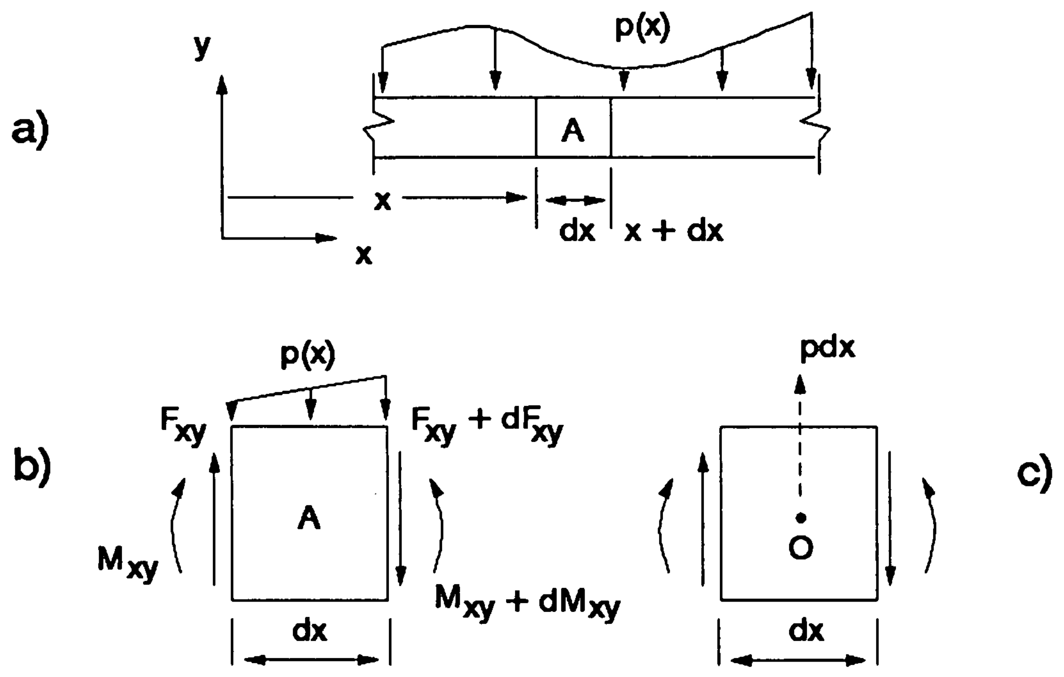


Fig. 6.2 - Prior Art

09915388.022301

Beam Curvature

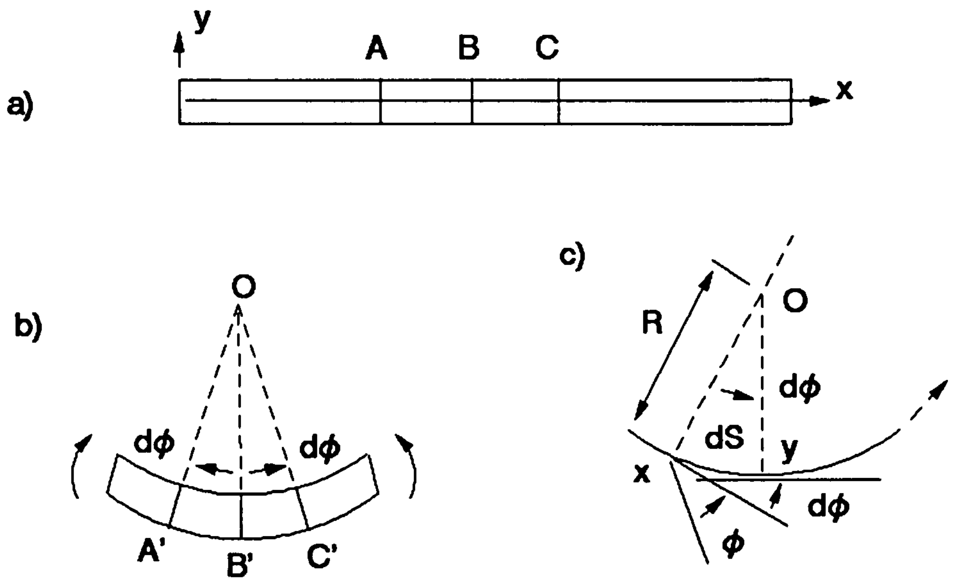


Fig. 6.3 - Prior Art

09915388.072301

Curvature and Line Deformation

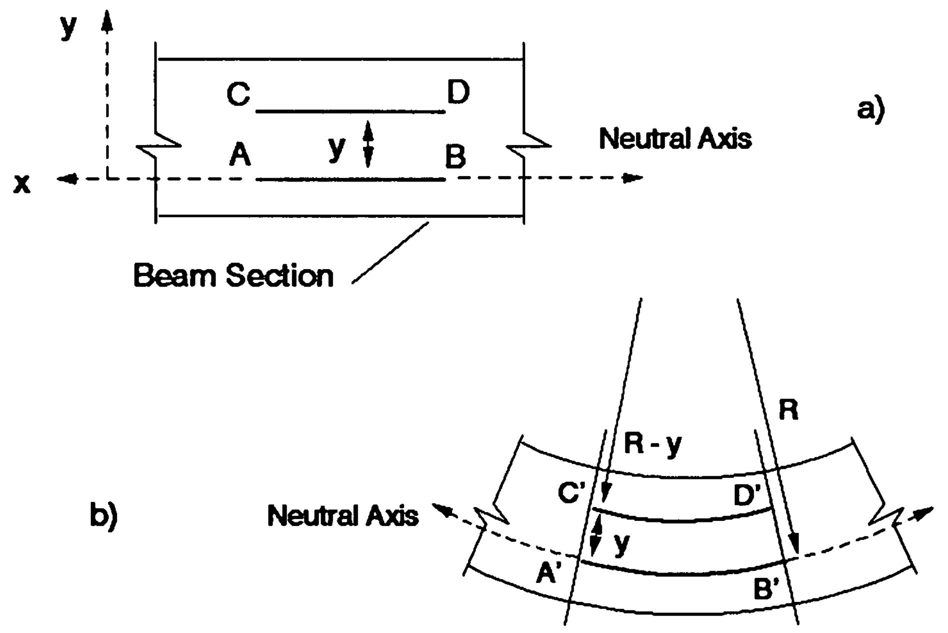


Fig. 6.4 - Prior Art

Beam Forces and Moments

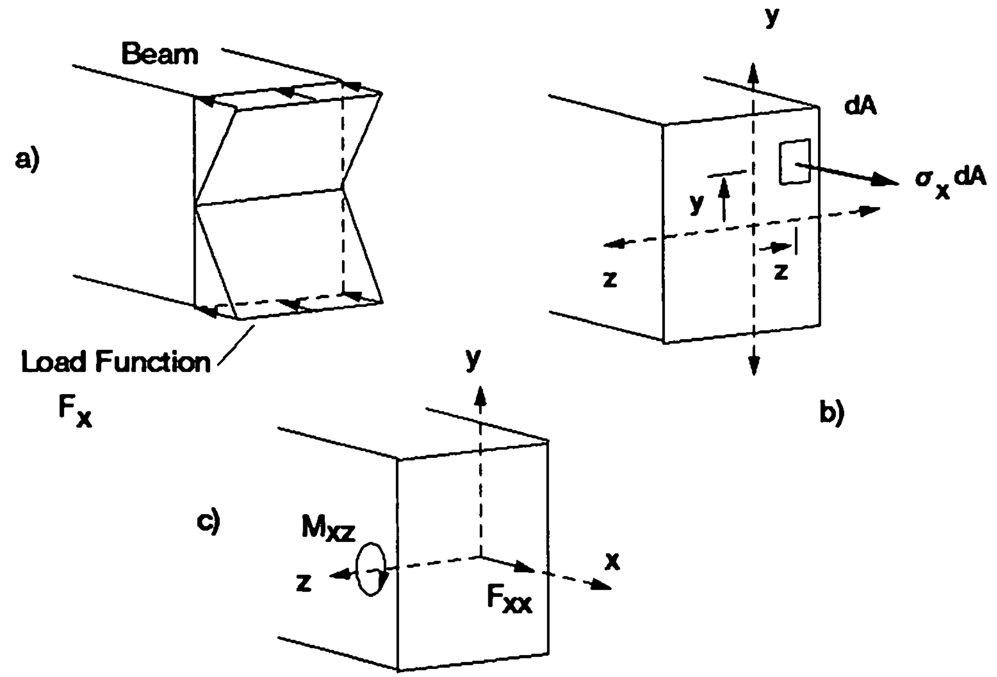


Fig. 6.5 - Prior Art

Neutral Axis Geometry

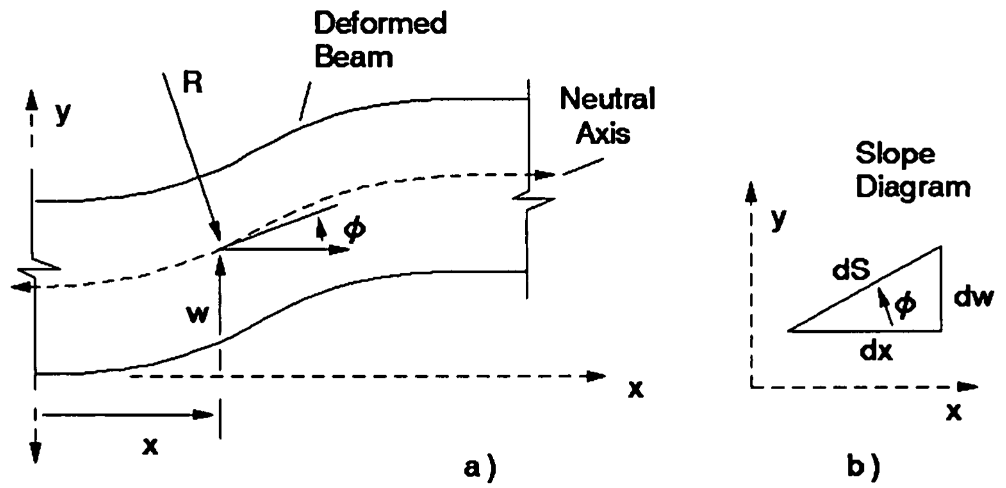


Fig. 6.6 - Prior Art

Loaded Cantilever Beam

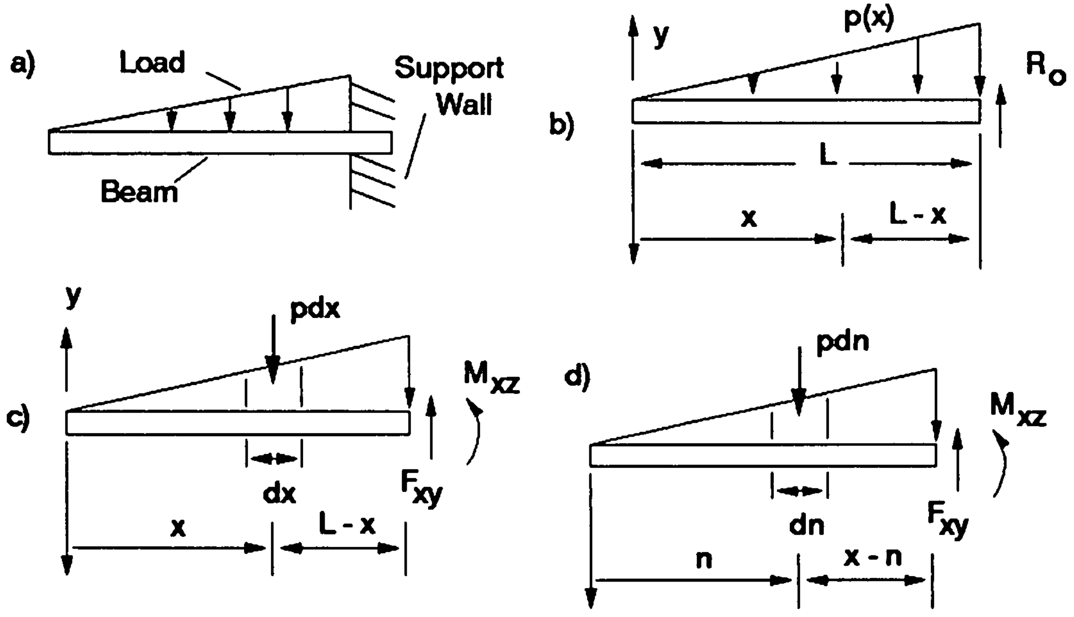


Fig. 6.7 - Prior Art

The 90 Degree Weave

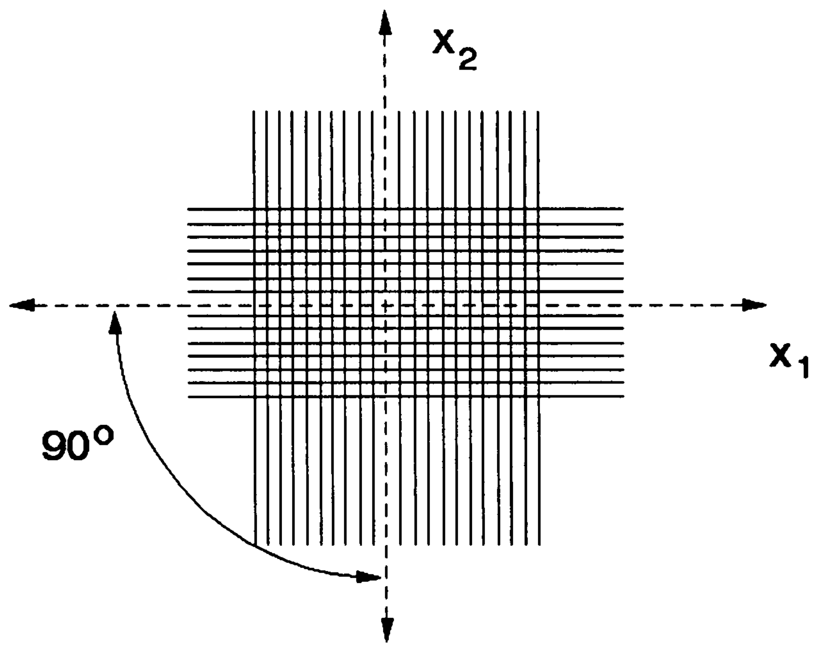


Fig. 6.8 - Prior Art

Stress & Strain vs Time

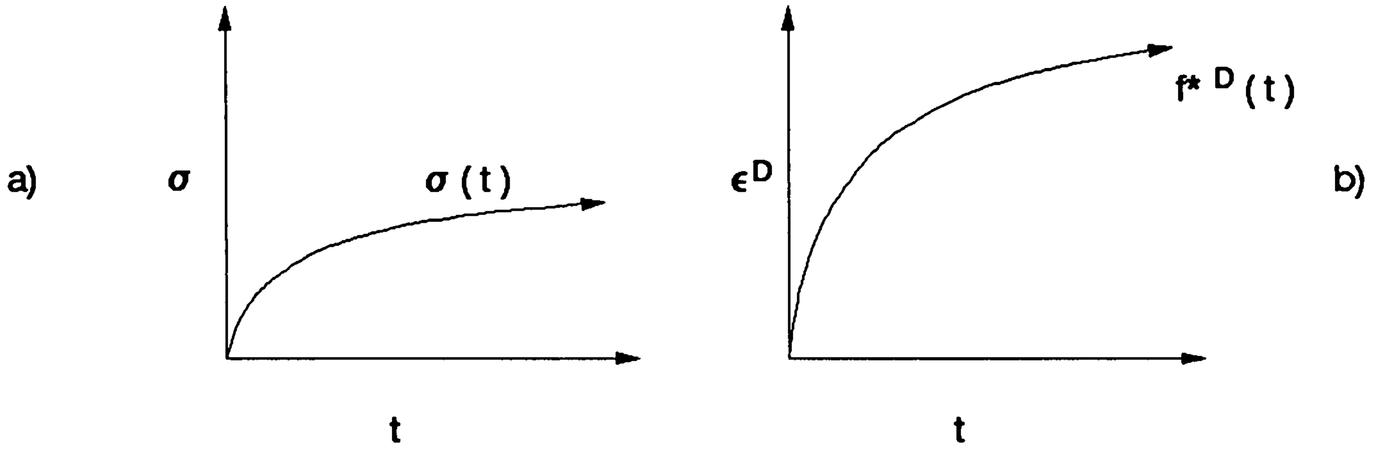


Fig. 8.1 - Prior Art

Stress & Strain vs Time

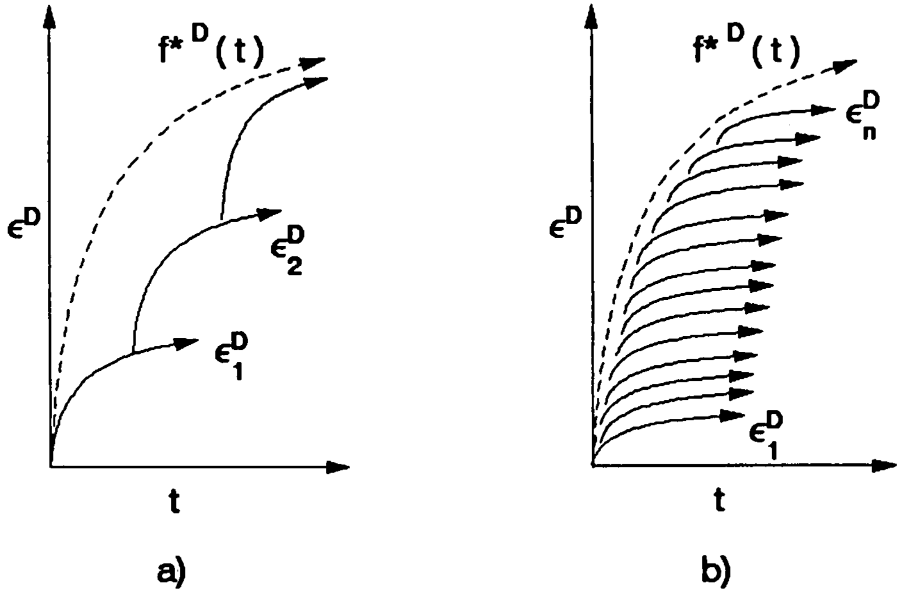


Fig. 8.2 - Prior Art

09915388.072601

Stress & Strain vs Time

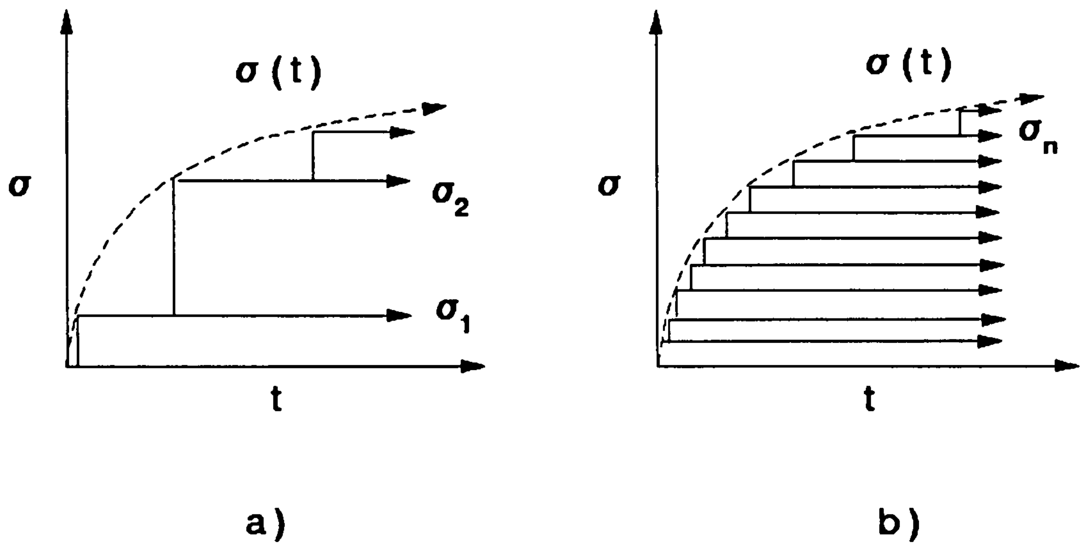


Fig. 8.3 - Prior Art

00915388.022301

Strain Components

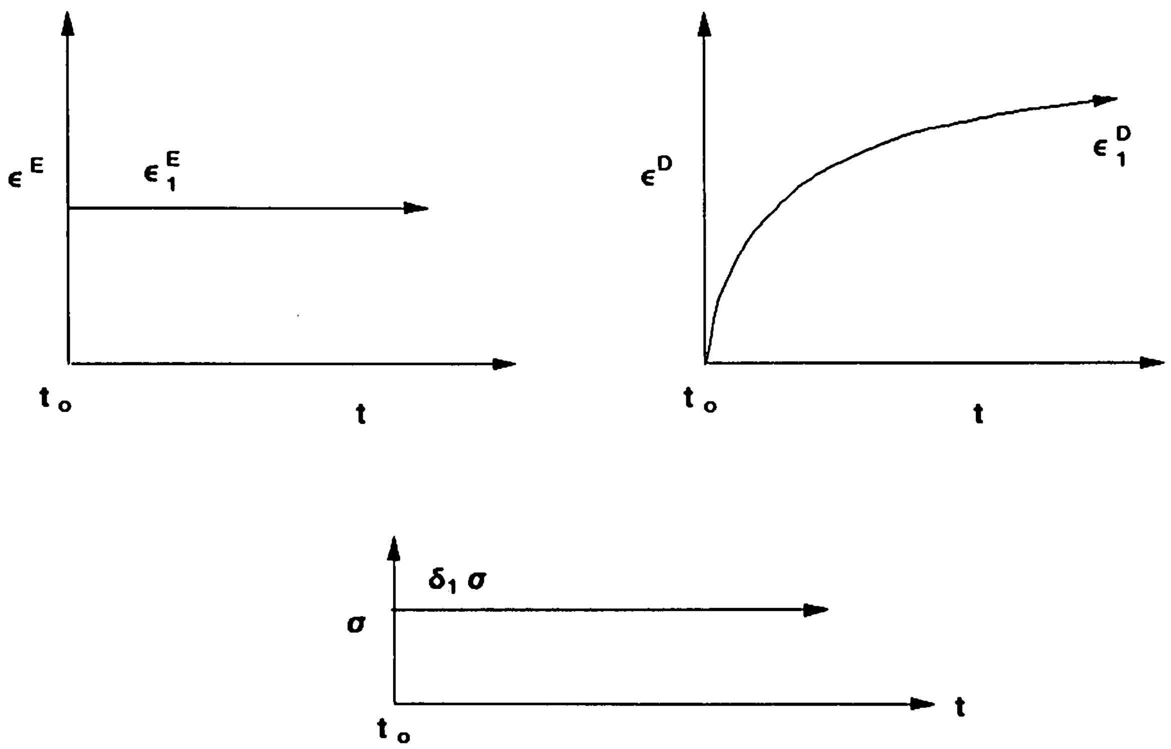


Fig. 8.4 - Prior Art

Strain Components

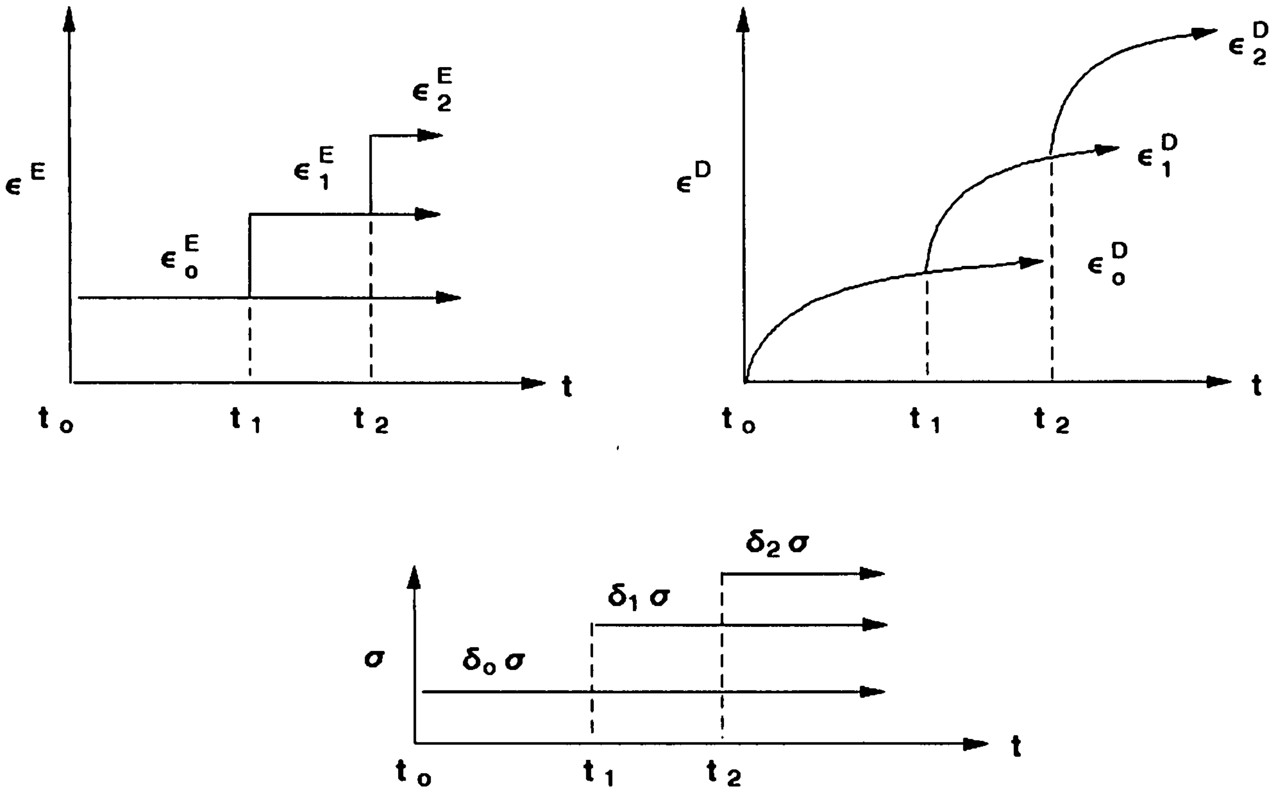


Fig. 8.5 - Prior Art